

"Pouch for packaging liquids for  
artificially inseminating animals"

5       The present invention concerns a pouch for packaging  
liquids for artificially inseminating animals, in  
particular pigs and horses.

This type of pouch, generally called a single dose  
pouch, is well known in the art and is the subject matter  
of FR-B-2 667 504 and EP-A-718 191 in particular.

10       In the above pouches, the same orifice is used to  
fill and to empty the pouch. The pouch is filled using a  
filter nozzle that is gripped in the filler passage when  
the nozzle penetrates the pouch. It slightly deforms the  
insertion passage of the filler passage. The same passage  
15       is designed to receive the body of the insemination probe.  
Because the passage has already been stressed by the filler  
nozzle, the probe is sometimes held imperfectly in the  
passage.

20       The present invention overcomes this problem and  
provides a pouch for packaging animal semen comprising two  
thermoplastics material films welded together by a weld  
delimiting a pouch along a closed path of generally  
rectangular shape defining two shorter sides and two longer  
sides when the pouch is empty and one of which shorter  
25       sides is interrupted, the weld defining from said  
interruption a filler passage, characterized in that the  
other shorter side is interrupted, the weld defining from  
said interruption a drain passage defining a drain part in  
said thermoplastics material films.

30       In the pouch of the invention, after the pouch has  
been filled with its contents, the filler passage is welded  
to close it and seal it permanently. The drain passage on  
the other side adapted to receive the insemination probe is  
welded closed.

35       However, problems are frequently encountered with

opening these pouches when they are used and it is often necessary to employ a tool or an object to open them.

To overcome these problems, the Applicant has developed a "peelable pouch" described in FR 2 750 399 that is reliable and simple to open without using any form of tool or object. This pouch is particularly suitable for containing animal semen.

The peelable pouch described in FR 2 750 399 has a single neck with two functions:

- filling the pouch with liquid via a needle, and
- draining the liquid using an insemination probe after opening the peelable weld.

A pouch of the above kind is extremely practical but has one slight drawback in that the liquid is drawn by capillary action onto the walls of the neck when the filler needle is removed after injection. This soiling, the amount of which varies, degrades the peelable weld.

To overcome this drawback, the Applicant has considered making the "peelable" weld of the drain passage in the factory and welding the filler passage on a packaging machine. The latter weld is much easier to carry out because it is directly in the blank film rather than the peelable material.

In a particularly advantageous second embodiment, the invention proposes a pouch for packaging animal semen comprising two thermoplastics material films welded together by a weld delimiting a pouch along a closed path of generally rectangular shape defining two shorter sides and two longer sides when the pouch is empty and one of which shorter sides is interrupted, the weld defining from said interruption a filler passage, wherein the other shorter side is interrupted, the weld defining from said interruption a drain passage defining a drain part in said thermoplastics material films, said pouch being characterized in that at least one of said two

thermoplastics material films has a peelable area in the drain part.

According to one feature of the invention, said peelable area comprises a sealing and peelable material,  
5 for example a wax.

The drain passage can be extended by a flare.

According to one advantageous feature of the embodiment of the pouch in accordance with the present invention having the peelable drain weld, the two  
10 thermoplastics material films are offset relative to each other in said drain part, for example by approximately 2 to 3 mm.

In accordance with another feature of the embodiment of the pouch in accordance with the invention with the peelable drain weld, in which it contains a liquid, said  
15 pouch is sealed in a sealing area within said peelable area, in the vicinity of the drain part of the drain passage, substantially transversely to the axis thereof.

The sealing area can then have a triangular or  
20 inverted V-shape in cross section.

With the pouches used until now, there have been problems identifying the doses that they contain. In the case of doses of semen, for example, the dose is identified by a colored label stuck to the pouch containing said semen  
25 or by adding a coloring agent to the semen. These identification methods have had their drawbacks, in particular the risk of the label coming unstuck or of the coloring agent degrading the semen, for example.

The present invention proposes a pouch overcoming the above identification problems, characterized in that part  
30 of the thermoplastics films is colored. Said colored part of the films defines a colored part of the pouch. The colored part may include an identifier.

If the pouch contains pig semen (sperm), a color is  
35 attributed to each breed or each genetic type of pig and

the colored part is that color. In this case, the color of the colored part identifies the breed or genetic type of pig concerned.

5 A marking area can also be provided on part of the thermoplastics films, possibly separate from the colored part. The marking area can carry an identification marking, for example a drawing.

10 In accordance with the invention, the identification marking is preferably seen through the film, which is transparent.

If the pouch contains pig semen (sperm), the marking area can include an identification marking for the breed and/or genetic type of pig concerned.

15 In one particularly advantageous embodiment of the invention the liquid for artificial insemination is animal semen, a medium or a diluting agent.

20 The invention will now be described in more detail and other advantages of the invention will become more clearly apparent in the following description given by way of example only and with reference to the accompanying drawings, in which:

- figure 1 is a view in cross section of a pouch in accordance with the invention, not yet sealed and extracted from a strip of pouches,

25 - figure 2 is a view in cross section of a "peelable" variant of the pouch in accordance with the invention, not yet sealed and extracted from a strip of pouches,

- figure 3 is a view in cross section of the pouch from figure 2 with its drain passage sealed, and

30 - figure 4 is a view in cross section of the pouch from figure 2 with its drain passage sealed by a different shaped sealing area.

35 The pouch 1 in accordance with the invention for packaging biologic liquids is made from two thermoplastics material films welded together by a weld 2 delimiting a

pouch 3 along a closed path of generally rectangular shape defining two shorter sides  $x$  and  $x'$  and two longer sides  $z$  and  $z'$  when the pouch is empty and one of which said shorter sides  $x$  is interrupted, the weld 2 defining from said interruption a filler passage 4, characterized in that the other shorter side  $x'$  is interrupted, the weld defining from said interruption a drain passage 9 defining a drain part 11 in said thermoplastics material films.

The filler passage 4 is extended by a centering insertion flare or cone 5.

Substantially equidistant holes 6 are formed near two longitudinal edges of the strip, outside the path of the weld. These holes are used to feed the thermoplastics material strip and to support it in a packaging machine.

Weld areas 7 and 8 are provided to hold the two thermoplastics material films together and prevent them separating in the feed device of the packaging machine.

The drain passage 9 is extended by a centering insertion flare or cone 10.

In accordance with the invention, after filling the pouch with its contents, the filler passage is welded shut to seal it. The weld 16 can be either at the top or at the bottom (shown in chain-dotted line) of the filler passage 4. The liquid level must be sufficiently high in the filler passage to prevent trapping any air. The weld is formed by two welding areas. The top of the liquid column is between the two welding resistors. The bottom weld is therefore made across the column of liquid and the top weld prevents the residue of liquid escaping, the residue being trapped between the two resistors.

In an advantageous embodiment of the pouch in accordance with the invention at least one of the two thermoplastics material films has in the drain part a peelable area 12 obtained by depositing a sealing and peelable material, for example wax.

The sealing and peelable material is melted locally in the sealing area 13. The cross section of the sealing area 13 is triangular in figure 3 and of inverted V-shape in figure 4.

5 To open the pouch, the operative separates the two thermoplastics material films by hand. The pouch can therefore be opened easily in the required area, delimited by its peelable area and the shape of the welding electrode. A probe or a tube can then be inserted into the  
10 opening and guided satisfactorily.

In one embodiment of the invention part of the thermoplastics films is colored, defining a colored part 14 and a marking area 15. The marking area 15 carries a drawing (not shown) seen through the transparent film and  
15 depicting the breed concerned.

The person skilled in the art will understand that although the invention has been described and illustrated by means of a particular embodiments, many variants are feasible within the scope of the invention as defined by  
20 the accompanying claims.